

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently Amended) A method of ~~storing data in~~ executing instructions using an address trace cache in the environment of branch prediction comprising the steps of:

if a first routine composed of a first group of instructions is to be executed, storing an address corresponding to each instruction in the address trace cache according to an order of executed instructions;

if a second routine composed of ~~repeated~~ a second group of instructions is to be repeatedly executed, storing a routine start address, a routine end address, a current iteration count of the routine representing a current number of executed iterations of the routine, and a total number of iterations of the routine;

providing the address trace cache with a current loop iteration ~~loop~~ counter for counting the current iteration count when the routine of repeated instructions is executed and a total loop iteration loop counter for ~~counting~~ storing the total number of iterations of the routine of repeated instructions; and

addressing a start address which will be accessed subsequent to execution of the routine if the current iteration count and the total number of iterations are identical.

2. Canceled

3. Canceled

4. Canceled